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Hemilamprops emiensis and *Mesolamprops bacescui*, Two New Lampropid Cumacean Crustaceans from Japanese Waters

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Abstract Two new cumacean crustaceans, *Hemilamprops emiensis* and *Mesolamprops bacescui* (Lampropidae) from bathyal depth in Japanese waters are described and illustrated. The genus *Mesolamprops* Given, 1964 has been represented by only 4 species from 3 localities in the northeast Pacific, the north Atlantic and the Mediterranean, and in this paper *M. bacescui* is newly added from the northwest Pacific. A key to the species of *Mesolamprops* is provided herewith.

Key words: Cumacean crustaceans, Lampropidae, two new species, bathyal depth, Japanese waters.

The specimens of two new lampropid species, *Hemilamprops emiensis* and *Mesolamprops bacescui* described herein, were taken during the cruises of R/V *Tansei Maru* of the Ocean Research Institute, the University of Tokyo. The former was collected from off Emi, Boso Peninsula (KT 76-16) and the latter from far off Otsuchi, Iwate Prefecture (KT 85-11). The type specimens are reserved in the National Science Museum, Tokyo (NSMT).

Family Lampropidae

The family Lampropidae consists of about 13 genera, of which *Lamprops*, *Hemilamprops* and *Mesolamprops* are closely allied to one another, but strictly separated by male character only, viz. in numbers of pairs of pleopods, 0, 3, and 2 respectively.

Hemilamprops emiensis sp. nov.

(Figs. 1-3)

Type specimen. Holotype, adult male (NSMT-Cr 12961), length including telson, 6.4 mm. St. C-1 (KT 76-16), off Emi, Boso Peninsula ($35^{\circ} 00.1'N$, $140^{\circ} 06.8'E$ – $35^{\circ} 00.5'N$, $140^{\circ} 07.5'E$), 145–150 m depth; 25 September, 1976. Gear: dredge.

Description of holotype. Carapace (Fig. 1A–B) almost ellipsoidal in shape as seen from above, a little more than 1/4 as long as total body, slightly more than 1½ as long as greatest width across middle part, and a little wider than depth; integument not pellucid. Eyelobe large, rounded, with 5 lenses. Pseudorostrum short, much less

than eyelobe, obtusely pointed. Middorsal keel well marked, flanked by lamellate crests (Fig. 1B–C) on frontal lobe. On hind part of carapace a middorsal groove present between inflated branchial regions. Antennal notch absent. Pereon (Fig. 1A–B) shorter than carapace. Pleon (Fig. 1A) much less than 1/2 as long as total body, longer than cephalothorax. First 3 pleonites successively longer posteriorly, each bears a pair of pleopods (Fig. 3G–H). Pleonite 5 longest, about 1½ as long as pleonite 3, 1¼ as long as pleonite 4. Pleonite 6 ca. 1/2 as long as pleonite 5. Telson (Fig. 1A, D) more than as long as pleonite 6, a little less than 5/6 as long as uropodal peduncle; pre-anal part ca. 1/2 as long as post-anal, serrated laterally; post-anal part narrowed posteriorly, with 6 pairs of lateral spines and 3 apical spines, middle one stoutest.

Antennule (Figs. 1A, 2A) with 3 peduncular segments, basal segment 1⅓ as long as distal 2 segments combined; 2nd segment ca. 1/2 as long as basal, 1⅓ as long as 3rd segment. Main lash 5-segmented; 3 basal segments subequal in length; 4th segment a little longer than 3rd, 5th very minute; 1st and distal segments each with numerous aesthetascs. Accessory lash 3-segmented, a little shorter than main lash; basal 2 segments subequal in length; 3rd segment a little longer than 2nd, bearing many aesthetascs. Antennal flagellum (Figs. 1A, 2B) reaches end of body. Mandible (Fig. 2C–D) with 1 lacinia mobilis and 10 setae on left, and 11 setae on right incisor process. Maxillule (Fig. 2E) with palp bearing 2 filaments. Maxilla, labium and maxilliped 1 as shown in Fig. 2F–H. Maxilliped 2 (Fig. 2I) with basis stout, suddenly narrowed at base. Maxilliped 3 (Fig. 3A) with basis nearly 1¼ as long as distal segments together, cylindrical, moderately curved and bears a row of spinules on distal inner edge; merus with 2 spinules on lateral edges; carpus with 3 spines on inner edge, and as long as propodus, twice as long as dactylus. Pereopod 1 (Fig. 3B) with basis slender, bearing a row of spinules on distal inner edge, distal segments missing. Pereopod 2 (Fig. 3C) with basis more than as long as distal 4 segments combined; carpus a little longer than ischium and merus combined, with simple setae on inner edge; propodus 1/5 as long as carpus; distal part of dactylus missing. Pereopod 3 and 4 (Fig. 3D–E) almost similar in shape; basis of pereopod 3 a little more than twice as long as rest of limb, narrowed distally, basis of pereopod 4 1¾ as long as rest of limb. Pereopod 5 (Fig. 3F) short, with basis about as long as rest of limb. Uropod (Fig. 1A, D) with peduncle 2½ as long as pleonite 6, bears 23 spines on inner edge; distal parts of rami missing.

Etymology. The specific name is referred to the type locality, off Emi, Boso Peninsula.

Remarks. The general formation of carapace of the new species, *Hemilamprops emiensis*, is similar to those of *H. tanseianus* Gamô, 1967, and *H. miyakei* Gamô, 1967 from Sagami Bay, 1000 m deep, and *H. pellucidus* Zimmer, 1908 from the Antarctic, South Africa, and New Zealand, 126–2725 m. The new species differs from them in that the carapace is not pellucid, with eyes. The new species is also very closely allied to *H. uniplicatus* (Sars, 1872) (Sars, 1899–1900) from the northeast At-

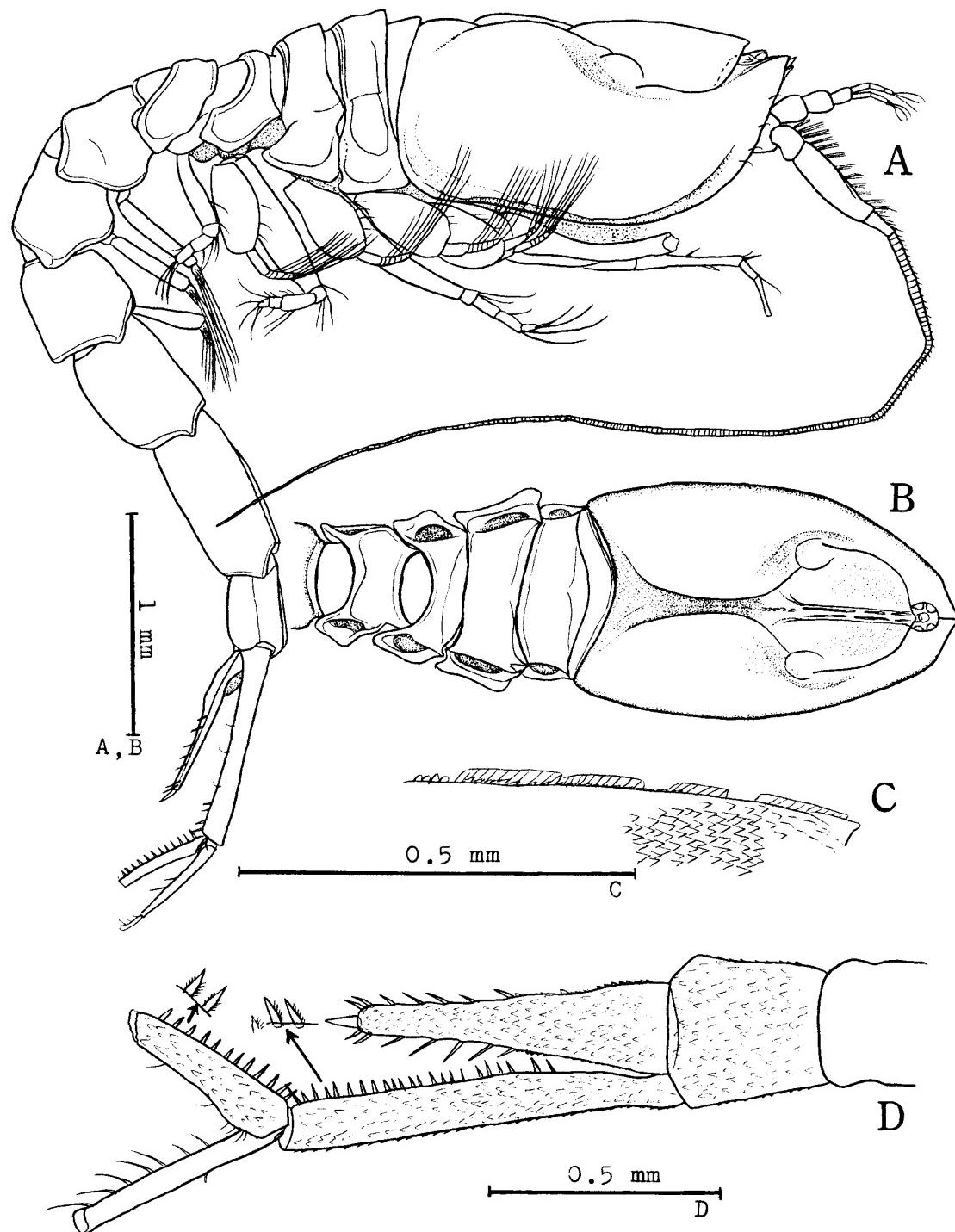


Fig. 1. *Hemilamprops emiensis* sp. nov., holotype adult male, length including telson, 6.4 mm. A, Lateral view; B, anterior part of body, dorsal view; C, crests of dorsomedian keel on frontal lobe; D, last 2 pleonites with telson and right uropod.

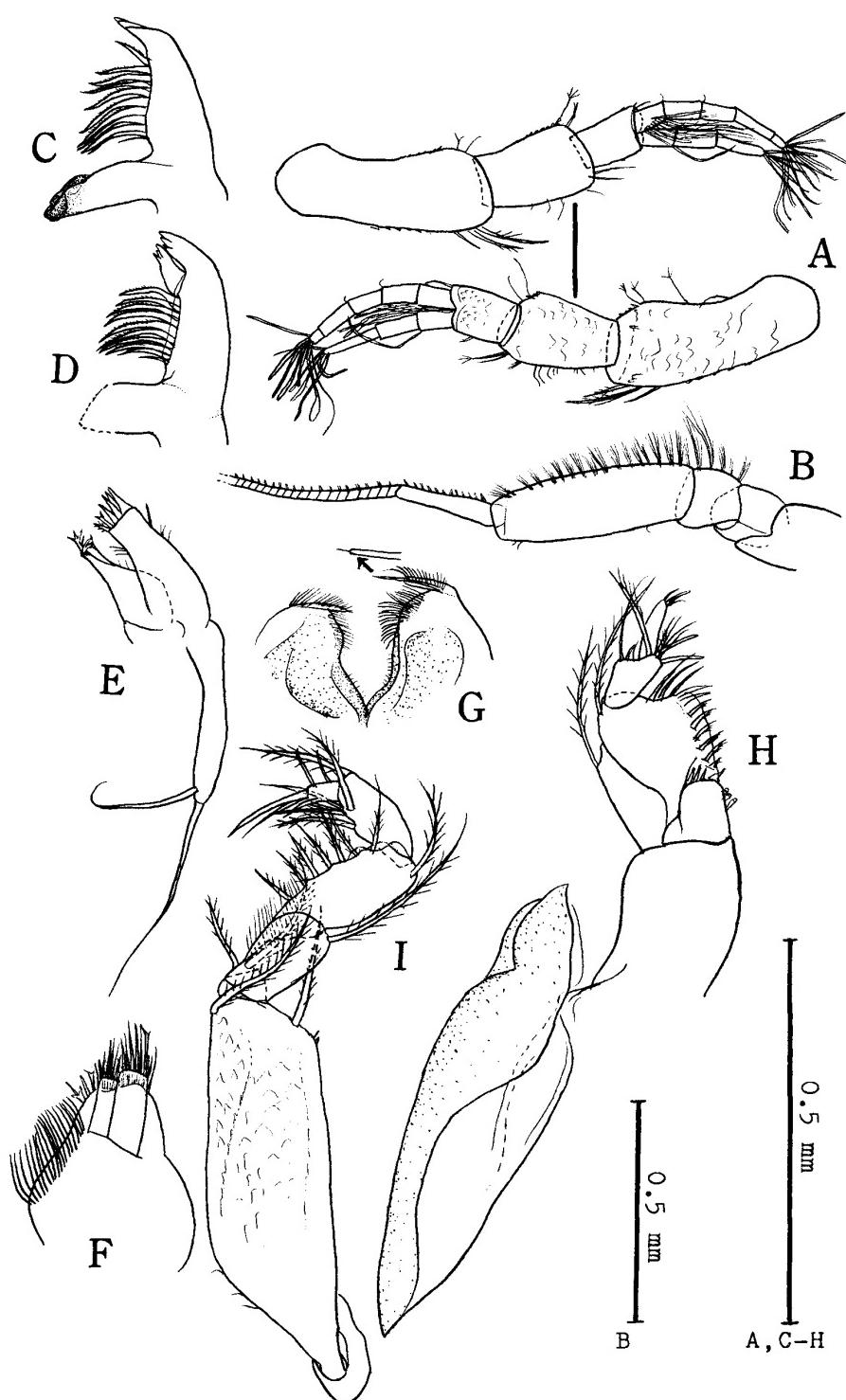


Fig. 2. *Hemilamprops emiensis* sp. nov., holotype adult male, A, Antennule; B, proximal part of antenna; C-D, mandible; E, maxillule; F, maxilla; G, labium; H, maxilliped 1; I, maxilliped 2.

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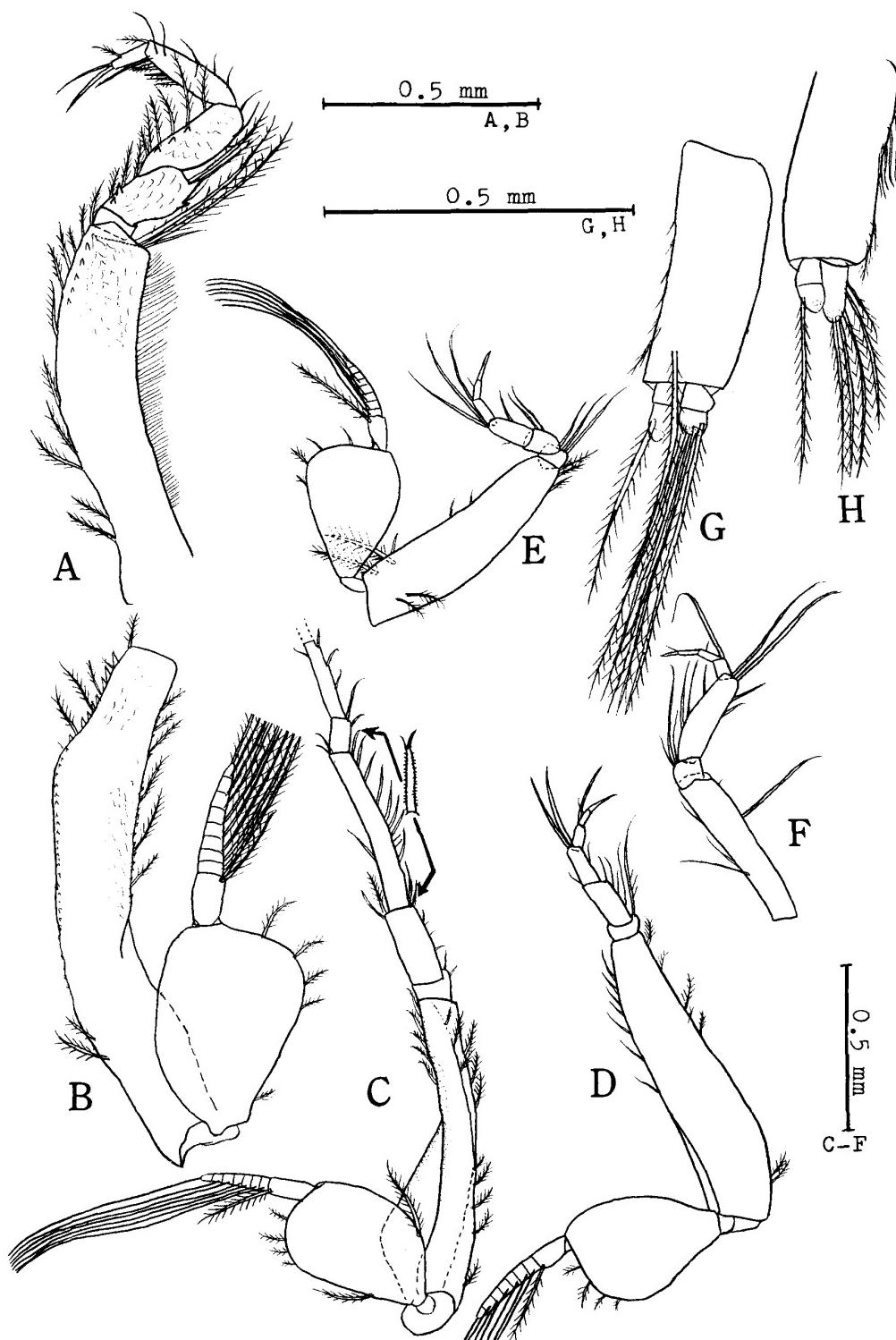


Fig. 3. *Hemilamprops emiensis* sp. nov., holotype adult male, A, Maxilliped 3; B, pereopod 1; C, pereopod 2; D, pereopod 3; E, pereopod 4; F, pereopod 5; G, pleopod 1; H, pleopod 2.

lantic, 110–3000 m, and *H. serrulatus* Ledoyer, 1977 from the Kelguelen Islands, 195 m, in general appearance of body and the telson with 6 lateral and 3 apical spines, but distinguished from them by that the telson is much shorter than the uropodal peduncle and provided with 3 apical spines, middle one stoutest, and that the eye-lobe is large, with eyes.

***Mesolamprops bacescui* sp. nov.**

(Figs. 4–9)

Type specimens. Holotype, adult male (NSMT-Cr 12962), length including telson, 16.8 mm; allotype, adult female with marsupium (NSMT-Cr 12963), length ca. 19.2 mm, anterior part of body heavily damaged; paratypes, 2 adult males (NSMT-Cr 12964), length 16.9 mm; St. SR-17 (KT 85-11), southeast far off Otsuchi, Iwate Prefecture (38°42.0'N, 143°01.6'E–38°40.6'N, 143°00.2'E) 1642–1659 m depth; 12 August, 1985. Gear: 3 m beam-trawl.

Description of holotype. Carapace (Fig. 4A–B) much less than 1/3 as long as total body, nearly 1½ as long as greatest width across middele part, twice as long as depth, almost elliptical in shape as seen from above. Integument of carapace rather thin, not translucent, with fine reticulate pattern bearing minute central spiniform granules. On either side carapace with 3 dotted lines extending obliquely forward and downward, each consisting of a row of prominent spiniform granules. Pseudorostrum slightly longer than eyeless eyeloobe, its basal part with a lateral row of denticles, running backward for a little way. Antennal notch rather widely open, with round antero-lateral angle. Lower edge of carapace finely serrate.

Pereon (Fig. 4A–B) a little more than 1/2 as long as carapace, all pereonites visible. Pereonite 5 posterolaterally much produced to form a pair of stout projections, bearing 8 long plumose setae ventrally. Pleon (Fig. 4A) a little less than 1/2 as long as total body. Pleonite 1 much more than as long as pleonite 2, subequal 3, having a large spine with minute spinules. Pleonite 4 ca. 3/4 as long as preceding 2 pleonites combined. Pleonite 5 longest, a little more than pleonite 4, twice as long as pleonite 6. Telson (Fig. 4A, C) nearly twice as long as pleonite 6, ca. 2/3 as long as uropodal peduncle; pre-anal part ca. 2/3 as long as post-anal, subcylindrical, with a middorsal depressed area bounded by a sharp ridge; post-anal part narrowed distally, with 22 pairs of lateral and a pair of small apical spines.

Antennule (Fig. 5A) with 3 peduncular segments; basal segment twice as long as 2nd; 3rd segment 1½ as long as 2nd, its distal part produced into a round projection, bearing numerous fine long hairs. Main lash 6-segmented, slightly longer than last peduncular segment; 2nd segment ca. 3 times as long as 1st, 1½ as long as 3rd or 4th; distal 2 minute, subequal, 1/4 as long as 4th, each bearing an aesthetasc at apex. Accessory lash ca. 2/3 as long as main lash, 4-segmented; 3rd segment longest, 1½ as long as 2nd, twice as long as 1st; distal segment minute, with a long seta about twice

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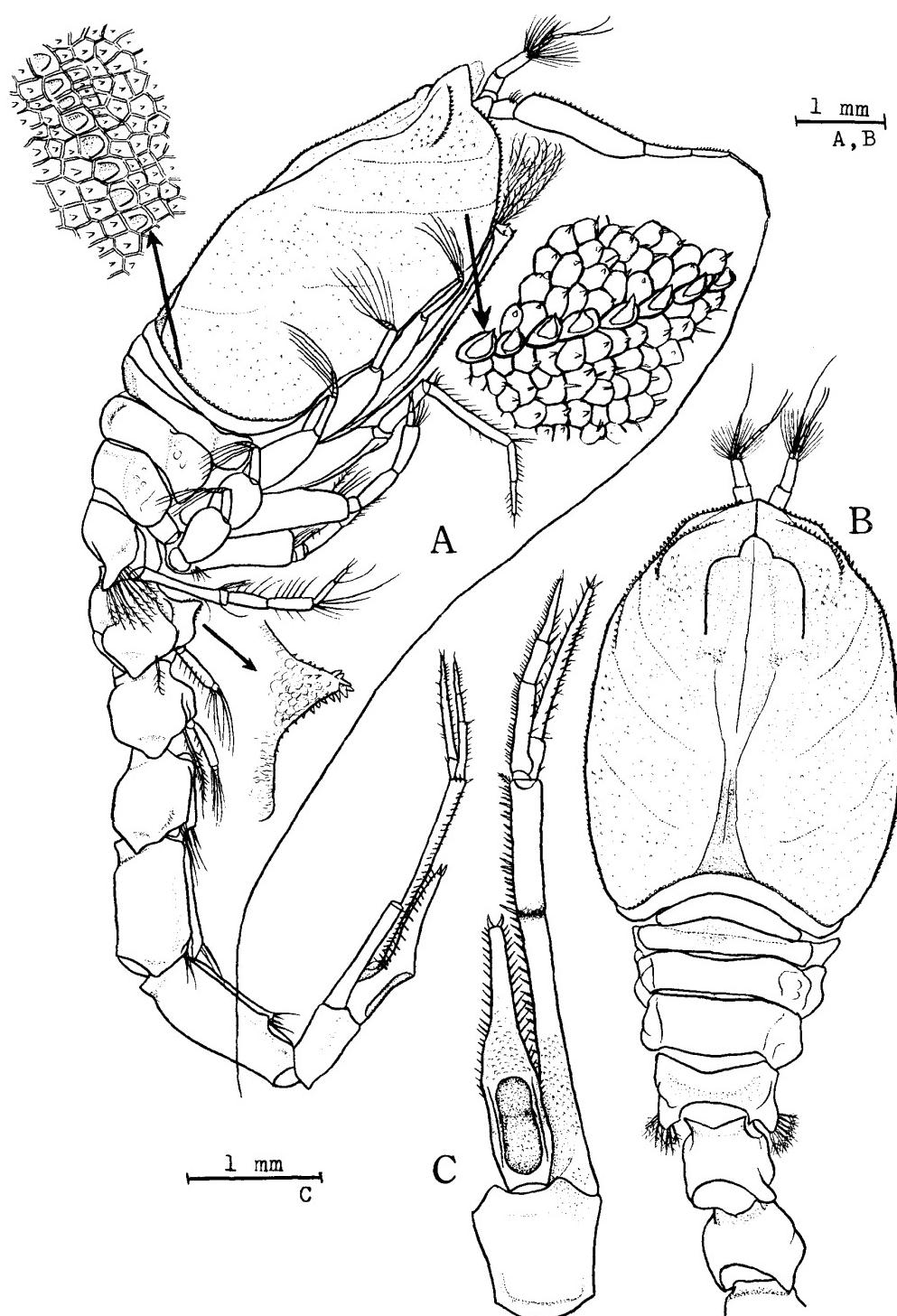


Fig. 4. *Mesolamprops bacescui* sp. nov., holotype adult male, length including telson, 16.8 mm.
A, lateral view; B, anterior part of body, dorsal view; C, pleonite 6 with telson and left uropod.

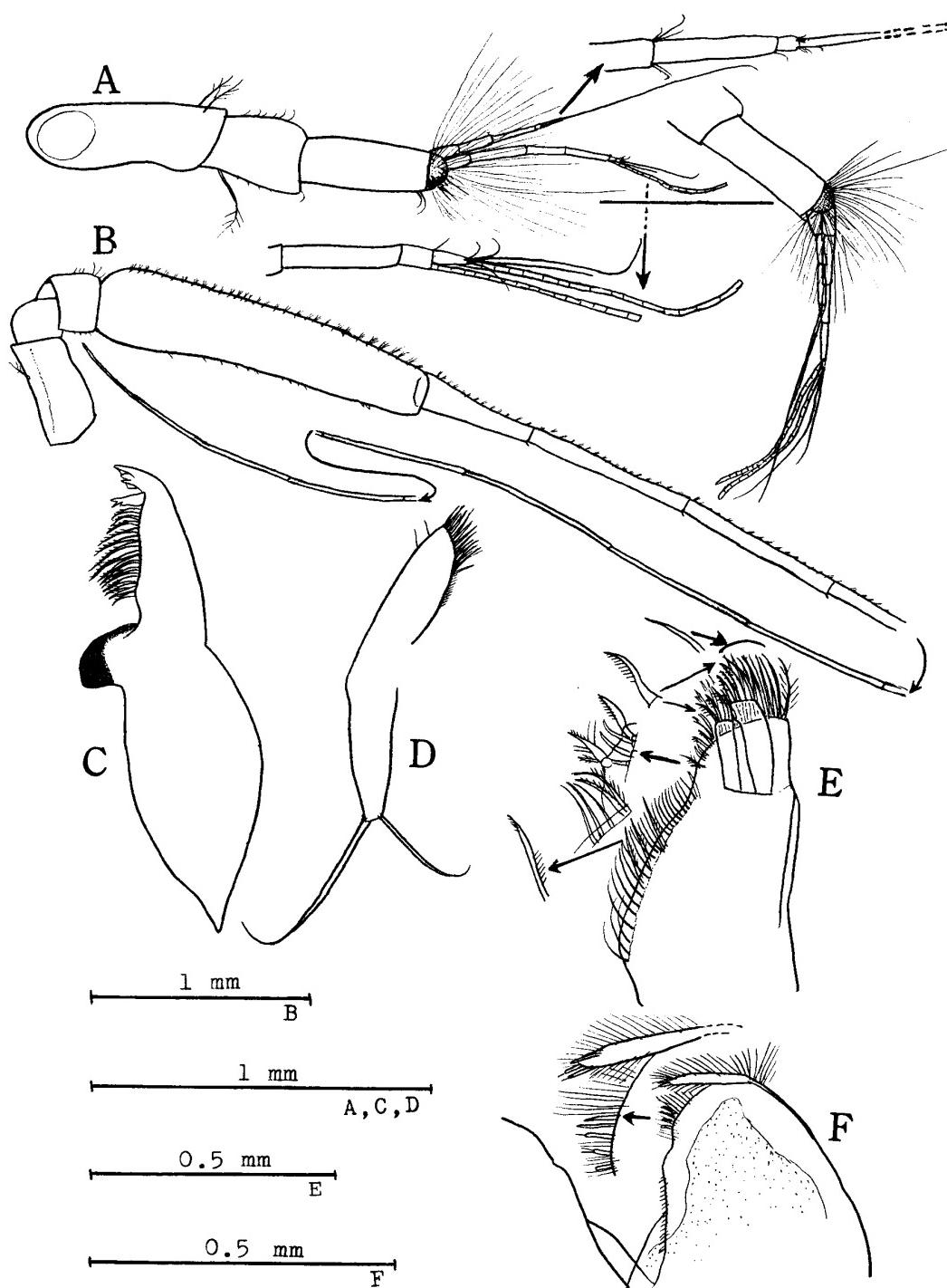


Fig. 5. *Mesolamprops bacescui* sp. nov., holotype adult male. A, Antennule; B, antenna; C, mandible; D, maxillule; E, maxilla; F, labium.

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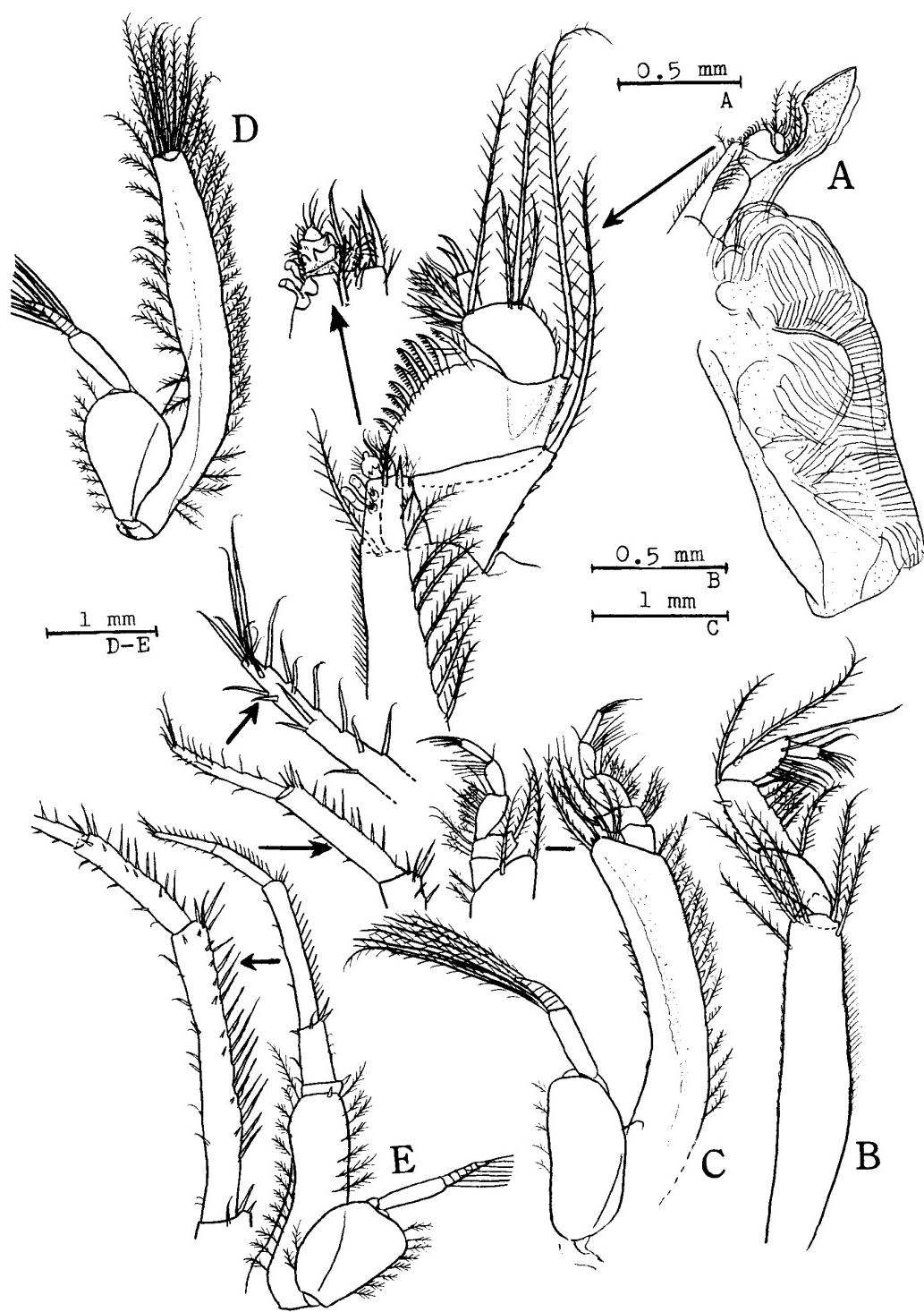


Fig. 6. *Mesolamprops bacescui* sp. nov., holotype adult male. A, Maxilliped 1; B, maxilliped 2; C, maxilliped 3; D, pereopod 1; E, pereopod 2.

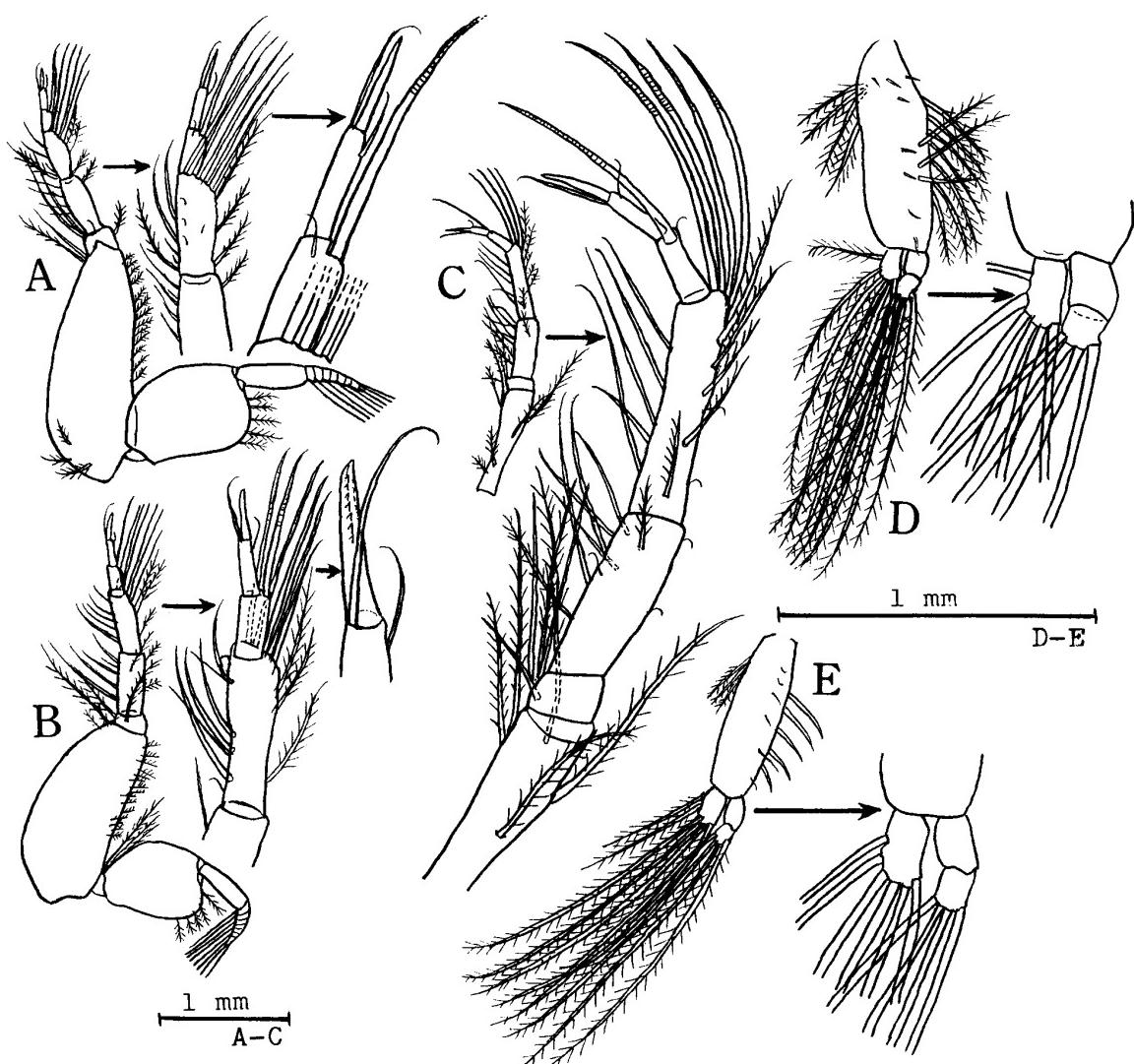


Fig. 7. *Mesolamprops bacescui* sp. nov., holotype adult male. A, Pereopod 3; B, pereopod 4; C, pereopod 5; D, pleopod 1; E, pleopod 2.

as long as 4 basal segments combined. Antennal flagellum (Fig. 4A, Fig. 5B) as long as total body. Mandible (Fig. 5C) with 14 setae and a lacinia mobilis on left incisor process. Maxillule (Fig. 5D) with palp bearing 2 filaments, endite of segment 1 missing. Maxilla and labium as shown in Fig. 5E-F. Maxilliped 1 (Fig. 6A) with many branchial lobules on epipod. Maxilliped 2 (Fig. 6B) with basis slender, Maxilliped 3 (Fig. 6C) with basis slender, moderately curved, ca. $2\frac{1}{5}$ as long as distal segments together, with plumose setae and 10 spines on inner and 8 spines on outer edge, its outer distal prolongation reaches to end of ischium; merus expanded outward, as long as ischium; carpus ovate, about twice as long as merus, a little more than as long as propodus or dactylus. Pereopod 1 (Fig. 6D) with basis slender, with plumose setae on lateral edges, its distal end with many long plumose setae dorsally; distal segments

missing. Pereopod 2 (Fig. 6E) with basis short, cylindrical, slightly less than 2/3 as long as distal segments together, with plumose setae on lateral edges; ischium 1/6 as long as merus; carpus a little more than twice as long as merus, poropodus or dactylus. Pereopod 3 (Fig. 7A) with basis robust proximally, much longer than distal segments together. Pereopod 4 (Fig. 7B) with basis much shorter than rest of limb. Pereopod 5 (Fig. 7C) about as long as pereopods 3 or 4. Two pairs of pleopods (Figs. 4A, 7D-E) almost similar in shape to one another, with exopod 2-segmented, a little longer than endopod. Uropod (Fig. 4A, C) slender, with peduncle armed with 37 small spines on inner edge; rami subequal in length, ca. 1/2 as long as peduncle; endopod 3-segmented; 1st segment as long as 2 distal segments combined, with 23 small on inner and 6 small spines on outer edge; 2nd segment ca. 1/2 as long as 1st, with 17 small on inner and 4 small spines on outer edge; 3rd segment ca. 1½ as long as 2nd, with 28 small on inner, 3 small spines on outer edge and 1 spine at apex. Exopod 2-segmented; 2nd segment 4 times as long as 1st, with 12 spines on inner and 19 spines on outer edge and 3 apical spines.

Notes on allotype. Adult female with marsupium (Fig. 8A-B), anterior part of body heavily damaged. Carapace may be measured ca. 1/4 as long as total body, 1½ as long as greatest width, with a pair of well marked dotted oblique lines on each side. Pereon (Fig. 8A) damaged, but all pereonites visible. Pereonite 5 much produced posterolaterally as in male, but without ventral plumose setae. Pleon (Fig. 8A, C) a little less than 1/2 as long as total body. Pleonite 3 slightly longer than pleonites 1 or 2, a little longer than pleonite 4. Pleonite 5 ca. 3/4 as long as preceding 2 pleonites combined. Pleonite 6 ca. 1/2 as long as pleonite 5. Telson (Fig. 8A, C) ca. 1½ as long as pleonite 6, nearly 1/2 as long as uropodal peduncle; pre-anal part 1½ as long as post-anal, somewhat expanded laterally in middle part, and without middorsal depression; post-anal part gradually narrowed posteriorly, with 8 pairs of latetal and a pair of small apical spines.

Antennule (Fig. 9A) with peduncle 3-segmented; 1st segment a little more than twice as long as 2nd; 3rd segment twice as long as 2nd. Main lash 3-segmented, as long as 3rd peduncular segment; 1st segment as long as 2nd, a little longer than 3rd bearing 2 long aesthetascs. Accessory lash 2-segmented, ca. 1/2 as long as 1st segment of main lash; 1st segment 1/3 as long as 2nd bearing several setae. Antenna (Fig. 9B) 4-segmented. Maxilliped 3 (Fig. 9C) with basis slender, moderately curved, 1½ as long as distal segments together; its distal outer angle produced to middle of merus; carpus about as long as ischium and merus combined; propodus about as long as carpus, more than 1½ as long as dactylus. Pereopod 1 (Fig. 9D) with basis slender, a little robust proximally, distal segments missing. Pereopod 2 (Fig. 9E) with basis a little more than 1/2 as long as distal segments together; ischium short; carpus a little less than twice as long as merus; propodus slightly less than 1/2 as long as carpus; dactylus ca. 3/4 as long as propodus, with short lateral and long distal setae. Pereopod 3 much longer than pereopod 4 (Fig. 9F-G), both bases more than as long as dis-

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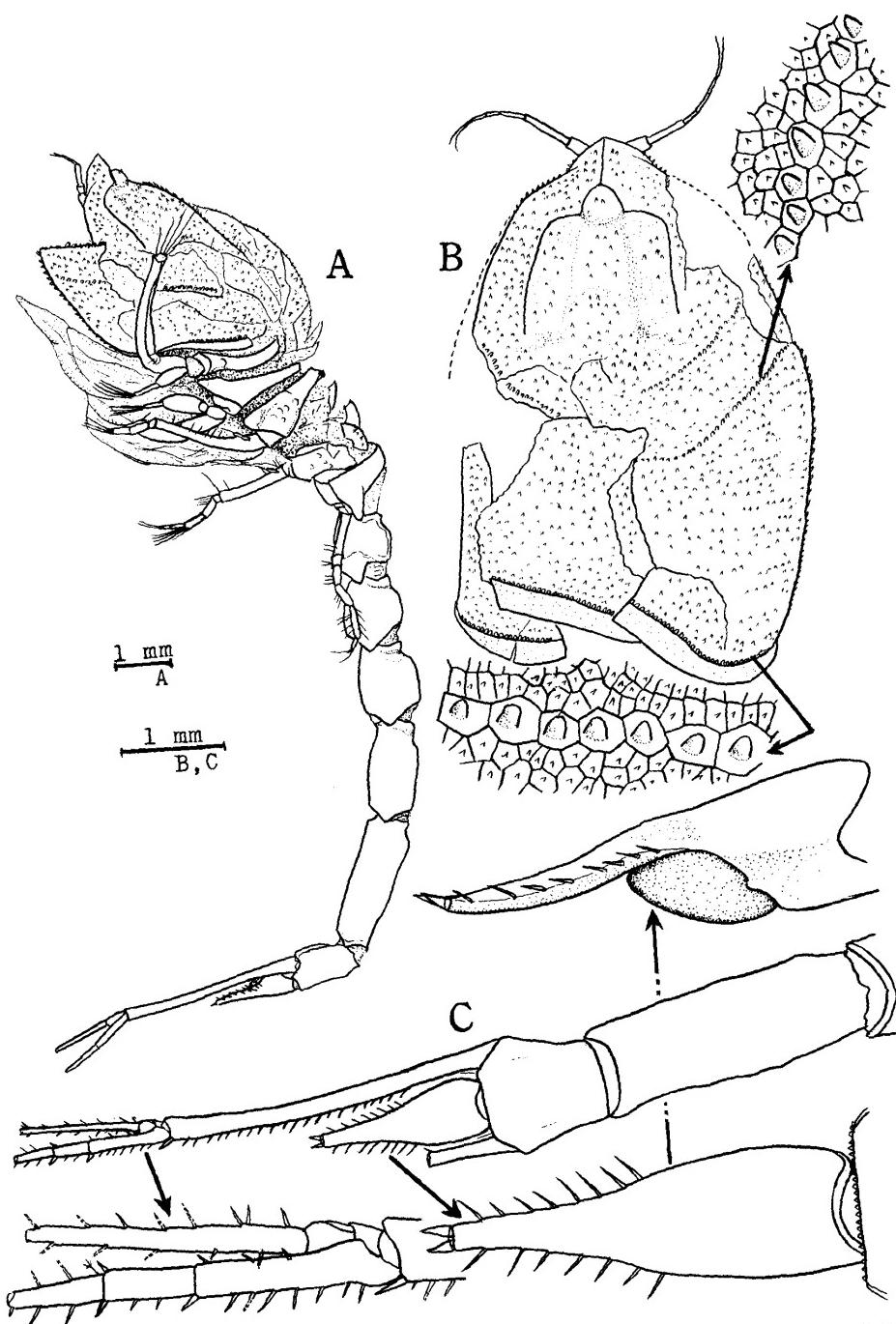


Fig. 8. *Mesolamprops bacescui* sp. nov., allotype adult female with marsupium, length including telson, ca. 19.2 mm. A, lateral view; B, carapace, dorsal view; C, last 2 pleonites with telson and uropods.

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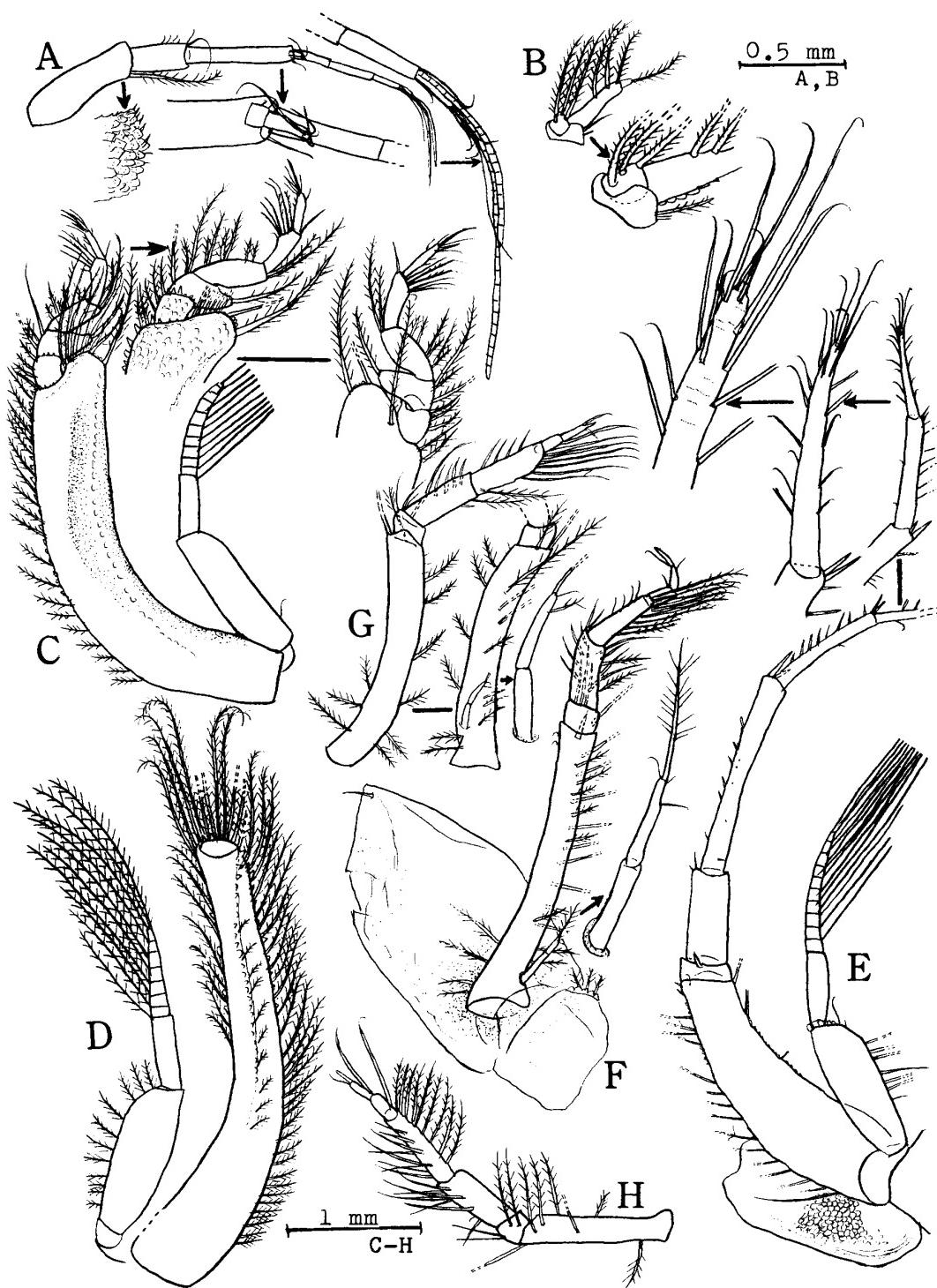


Fig. 9. *Mesolamprops bacescui* sp. nov., allotype adult female. A, Antennule; B, antenna; C, maxilliped 3; D, pereopod 1; E, pereopod 2; F, pereopod 3; G, pereopod 4; H, pereopod 5.

tal segments together and with rudimentary 2-segmented exopod. Pereopod 5 (Fig. 9H) very short.

Notes on paratypes. Main characters of 2 adult males are almost similar to those of the adult male holotype.

Etymology. The new species is dedicated to Dr. Mihai Băcescu, Honorary Director of the National Museum of Natural History Grigore Antipa, Bucharest, Romania.

Remarks. The genus *Mesolamprops* is consisted of 4 species. Since Given (1964) established the genus based on the type species, *bispinosus* from off Point Fermin Light, Los Angeles County, southern California, 30–100 m deep, *dillonensis* was described from Dillon Beach, California, 13–21.5 m deep by Gladferter (1975), *abyssalis* from off Bermuda, 4667–4862 m by Reyss (1978) and *denticulatus* from near Marseille, 320–370 m by Ledoyer (1983). The new species can be added from the northwest Pacific, and it is easily distinguished from 4 species mentioned above by having the characteristic 3 (male) or 2 (female) pairs oblique dotted lines on each side of carapace and a pair of small apical spines on the telson in both sexes. This study revealed that the genus has wide horizontal and vertical distribution in the Northern Hemisphere.

Key to the species of *Mesolamprops*

1. Telson subequal to uropodal peduncle with 3 apical spines middle one longest, and subapical 2 much beyond median one 2
- Telson much shorter than uropodal peduncle 4
2. Carapace without curved fold on each side 3
- Carapace with 2 curved fold on each side; anterior one extends from posterior end of middorsal keel to anterolateral angle; posterior one only extends within dorsolateral part and parallel to anterior one; telson with 5 (also 4, really 3 or 6) lateral spines *M. dillonensis* Gladferter, 1975
3. Telson with 2 lateral spines *M. bispinosus* Given, 1964
- Telson without lateral spine in male, with 2 spines in female; with 5 apical spines issuing together, middle one longest in both sexes *M. abyssalis* Reyss, 1978
4. Carapace without oblique lateral fold or line; telson 2/3 as long as uropodal peduncle, with 5 apical spines and 2–3 lateral spines.....
- *M. denticulatus* Ledoyer, 1983
- Carapace with 3 (male) or 2 (female) of oblique dotted lines on each side; telson 2/3 (male), 1/2 (female) as long as uropodal peduncle, with 2 small apical spines and 22 (male) 8 (female) lateral spines..... *M. bacescui* sp. nov.

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